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Research Paper

Optimizing the Sustainment of U.S. Army Weapon Systems

Written By

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Abstract

The Army has drawn down its Operational Tempo in two theaters of operation: Afghanistan and Iraq. Contingency operation funding is also being drawn down and its availability is based on strong needs justification. Future sustainment of Army managed manned and unmanned air and ground weapon systems is a critical topic not only within the Army Acquisition and Sustainment communities, but also within the Operational and Institutional Army. The research will provide courses of action to be considered to answer the question "How can the Army optimize post war system sustainment support?"

A literature review was conducted to identify statutes, regulations, policy, and procedures which form the framework of current Army weapon system sustainment. The review provides insight into the processes the Army uses to identify capability gaps and methods used to address these gaps. The research considered sustainment issues identified by strategic Army documents such as the Army's Capability Needs Analysis (CNA), the U.S. Army Long-range Investment Requirements Analysis-18 (LIRA-18), and the Joint Acquisition and Sustainment Review (JASR) Memorandum, signed 3 Dec 2014, by the Assistant Secretary of the Army (ASA) for Acquisition, Logistics, and Technology (AL&T), and the Commanding General (CG), Army Materiel Command (AMC). Qualitative and quantitative data was collected and analyzed from the communities involved in the sustainment of Army weapon systems. The analysis of the collected data was used to craft possible Courses of Action for consideration by Senior Army leaders.

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Chapter 1 - Optimizing the Sustainment of U.S. Army Weapon Systems

In a paradigm shift from the past 13 years of war, more Army systems transitioning to sustainment support will be maintained by the Soldiers using that piece of equipment and not contractor personnel. In his recent discussions with Army Senior Warrant Officers at the first ever Army Senior Warrant Officer Summit, Army Material Commander, General Dennis Via stated: “With a shrinking end strength and budget, the Army will need to relearn how to sustain what it has, rather than depend on contractor logistics support or replacements” (Lopez, 2015). Soldiers performing maintenance on their own equipment is a task that has been a secondary priority at best during the past 13 years of war. Recurring deployments and mission Operational Tempo (OPTEMPO) in two Areas of Responsibility (AOR) resulted in a decision by Senior Army leadership to require Soldiers to focus on Common Soldier Skill Tasks during the past 13 years. The result has been the erosion of perishable maintenance skills. The Army must develop the most effective plan to sustain these systems at peak readiness. Studies of how to adjust maintenance schedules using Condition Based Maintenance (CBM) data and corrosion control efforts from the Department of the Army level down to the field Commanders are meant to provide Senior Army leaders with options to reduce sustainment, and replacement costs. As evidenced by the referenced material, there is an ongoing effort within the sustainment, research, acquisition, and commercial communities to study and effectively manage Army sustainment. One effort is the development of Maintenance Steering Groups (MSG) to perform extensive data collection and analysis of currently fielded systems to craft effective and efficient Scheduled Maintenance Programs (SMP). In order to identify capability gaps which require resolution by the acquisition and sustainment communities by the users, and to identify potential means which can be employed to bridge these gaps, the research consisted of the review and analysis of

various strategic level documents and initiatives. The results will be provided to Senior Army decision makers for consideration as they shape future Army sustainment in the face of budget uncertainty caused by the Budget Control Act of 2011, and the need to prepare for future contingency operations and the unknown challenges they will bring. The pressure is on the Department of Defense to make the best use possible of the resources provided by the President and Congress. Likewise, the Army is feeling the same pressure to optimize the use of precious resources.

The President, Congress, in particular, Arizona Senator John McCain, is leading the charge as evidenced by the 2016 United States Budget request and a speech given by Senator McCain at the Center for Strategic and International Studies on 26 March 2015. The 2016 United States Budget touts the reductions to the Department of Defense manpower, and budget, at a time when the DoD must prepare for global conflicts in the Pacific, renewed focus on the European theaters, and ongoing Southwestern Asia conflict. The DoD is being challenged to be innovative and fiscally prudent in everything it does these days (DoD, 2017).

The House Armed Services Committee (HASC) Report on the National Defense Authorization Act (NDAA) for FY16 recognized the multitude of challenges the Department of Defense (DoD) and the services face as they forge plans to meet the United States security needs in austere times. The HASC did not provide relief to their expectations on the DoD's mission, rather, the challenge is to do more with the same, or less. Having to prioritize the use of resources to meet the country's security needs and fight its wars is nothing new to the DoD. Operations and Maintenance (O&M) funding has never been adequate to cover 100% of the DoD's requirements. Competition between services and between organizations within the individual services, has existed since the earliest days of the DoD. The HASC recognizes that:

Overall readiness has improved across the military services from lows experienced in the wake of fiscal year 2013 sequestration when only 2 Army non-missioned brigade combat teams were ready, the Navy could not deploy a carrier strike group, the Air Force grounded 31 squadrons, and the Marine Corps reduced its maintenance of barracks, facilities, and training ranges to roughly 16 percent of the required “bare minimum” to protect readiness for rapid deployment. However, the committee notes that recovery from these ebbs in readiness has taken time, with most military services reporting a return to pre-sequester levels of readiness only in recent months. The budget request for fiscal year 2016 calls this recovery “fragile” (NDAA, 2016, p. 96).

In spite of the resource shortages and HASC concern, the services are still faced with the challenges of meeting the current high operational tempo. Even though the United States military has drawn down in Iraq and Afghanistan, the issue of addressing ongoing terrorist threats does not allow for prolonged downtime for the services. Islamic State in Iraq and the Levant (ISIL) and Al Qaida continue to challenge worldwide peace and the bulk of the global response to these threats rests with the United States as the lead. Any readiness gains made will be short lived as the DoD continues to respond to the tasks assigned by our Congress and President. Only a year ago the United States military engaged a new foe as it deployed personnel and equipment in response to the Ebola crisis in West Africa and we are increasing our military advisory operations in Iraq. US Air Force air sorties in Iraq and Syria have increased, in particular in response to recent terrorist attacks in San Bernardino and Paris. An increasingly antagonistic, and emboldened Russia, has resulted in the planning and execution of major infantry and armor deployments in Europe to reassure and train European allies. The DoD also

supported the Yemen embassy evacuation which, when combined with the aforementioned actions, have kept operational tempos at elevated levels with no relief in sight.

Pressure is on the DoD from the highest levels to figure out how to cut sustainment costs and still meet the nation's defense needs in order to ensure the United States security.

The President's signed 2016 United States Budget states:

The Department of Defense continues to pursue efficiencies, including a 20-percent reduction to management and headquarters staff, divestiture of legacy platforms no longer required to execute the defense strategy, and ongoing efforts to shutter unneeded facilities, including administrative actions and requested legislative authority for another round of Base Realignment and Closure. Taken together with the larger scale reorganization proposals, these efforts represent the President's ongoing commitment to promoting Government efficiency, preventing duplication, and making Government work better and smarter for the American people (U.S. Budget Office, 2015, p. 83).

In an article in *Breakingdefense.com*, 26 Mar 2015, Colin Clark wrote that Sen. John McCain had announced plans for a long-term review of the Goldwater-Nichols Act, the law which is the underpinning of the current American military structure. The Goldwater-Nichols legislation produced DoD's current chain of command from the president to the Secretary of Defense, to the Combatant Commanders.

The article further states the following:

The Committee will be conducting a preliminary examination of the structure, roles, and missions of civilian and military organizations within the (Defense) Department. That will set the stage for a broader review of these issues starting after this year's NDAA and extending into next year, many of which are tied directly to Goldwater-Nichols Act, a congressional staff member wrote in an email after McCain spoke this morning at the Center for Strategic and International Studies (Clark, 2015).

As provided by Clark in his article, during his speech at CSIS Senator McCain stated: At the same time, three decades later, there are real questions about how Goldwater-Nichols has been implemented and what unintended consequences may have resulted. For example:

- Are the roles and missions of the Joint Staff, Combatant Commands, Joint Task Forces, and other headquarters elements properly aligned to conduct strategic planning, equip our warfighters, and maximize combat power?
- Does the vast enterprise that has become the Office of the Secretary of Defense further our ability to meet present and future military challenges?
- Does the constant churn of uniformed officers through joint assignments make them more effective military leaders, or has this exercise become more of a self-justification for a large officer corps?
- Is the Defense Officer Personnel Management Act of 1980 still appropriate for the joint force of 2015 and beyond, or is it time to review this law? (Clark, 2015)

As the global leader, the United States is faced with a wide range of threats in three regions of the world: the Pacific, Europe, and Southwest Asia (D. Via, personal communication, 10 December 2012). High ranking politicians are taking action to assist the military services' ability to react to their materiel needs as they plan to engage these threats once they manifest into reality. As a means to increase the efficiency of the DoD acquisition process, Senator McCain directed the decentralization of acquisition program decision making from the Office of the Secretary of Defense to the Service Component Acquisition Executive. He is also reviewing

current Joint Command officer assignments as well as joint planning/engagements. McCain is taking action to shape how the Joint Services look and fight (Clark, 2015).

The Army is faced with a huge task and must consider which risk(s) are acceptable in the face of resource shortages and continued budgets that do not provide resources to meet 100% of its requirements. In the 2015 National Security Strategy, the President reassured the American people that defense of our nation is his number one priority and that threats against Americans abroad and our allies is the second priority on his strategic list (Obama, 2015).

Problem Statement

Many Department of the Army systems are currently transitioning to sustainment support (D. Via, personal communication, 10 December 2012). At the same time Soldiers are returning to performing organic field level maintenance on their equipment after 13 years of war. Recurring deployments and mission OPTEMPO in two Areas of Responsibility required them to focus on Common Soldier Skill Tasks during this time and many of these perishable maintenance skills have eroded (D. Via, personal communication, 10 December 2012). The Army should develop the most effective and efficient plan to sustain these systems and maintain readiness, to answer the question: How can the Army optimize post war system sustainment support?

Significance of Research

Sustainment of Army systems of all types is of interest at the highest levels of the DoD and the Army as evidenced by the inclusion of three sustainment related topics in the “Acquisition Support Center (ASC) provided_FY15DAU-SSCF Research Topics, June 2015” document which contains the following suggested research topics:

- Transition from production to sustainment - What changes are needed in the planning and execution of resources (funding/people) to improve future readiness.
- Contractor logistics Support - is it still relevant today?
- Why Program Managers can never truly be Life Cycle Managers - The problem, a lack of alignment of funding with responsibility for PM managed systems. (U.S Army Acquisition Support Center, pp. 2,4).

Sustainment is of interest at the highest levels of the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology (ASA (AL&T)), AMC, and the Combined Arms Support Command (CASCOM), as evidenced by the strategic documents, and initiatives, these organizations have generated. For example, the common findings of interest to ASA (AL&T) and AMC, per their co-signed Joint Acquisition and Sustainment Review (Shyu & Via, 2014) indicate the importance of the need to address future sustainment challenges in the most effective and efficient use of scarce resources:

- JASR Common Findings:
 - The recruitment, development, and retention of our acquisition workforce remains our paramount priority.
 - The frank discussion of local issues facilitates enterprise solutions.
 - The organic industrial base must adapt to our fiscal environment.
- As an effort to maintain their strategic dialog and address the above findings, the Honorable Ms. Shyu and General Via directed the establishment of joint ASA (AL&T) and AMC task forces to implement the below initiatives:
 - Improve clarity of materiel enterprise roles, missions, functions, and authorities. (Co-Led by AMC and ASA (AL&T) OASA (Acquisition Policy and Logistics))
 - Develop flexible workforce management processes and tools. (Co-led by DASA Plans, Programs and Resources (ASA (AL&T)) and AMC G-1).
 - Standardize matrix support. (Co-led by DASA Plans, Programs and Resources (ASA (AL&T)) and AMC G-8).
 - Optimize weapons system contracting. (Co-led by CG, ACC and DASA (Procurement)).

- Assess the organic industrial base. (Co-led by DASA (Acquisition Policy and Logistics) and AMC G-4) (Shyu & Via, 2014).

TRADOC's Army Capabilities Integration Center (ARCIC) identified Lines of Effort (LOEs) critical towards maintaining superiority over our foes, see Fig. 1 below from their white paper. (U.S. ARCIC, 2015)

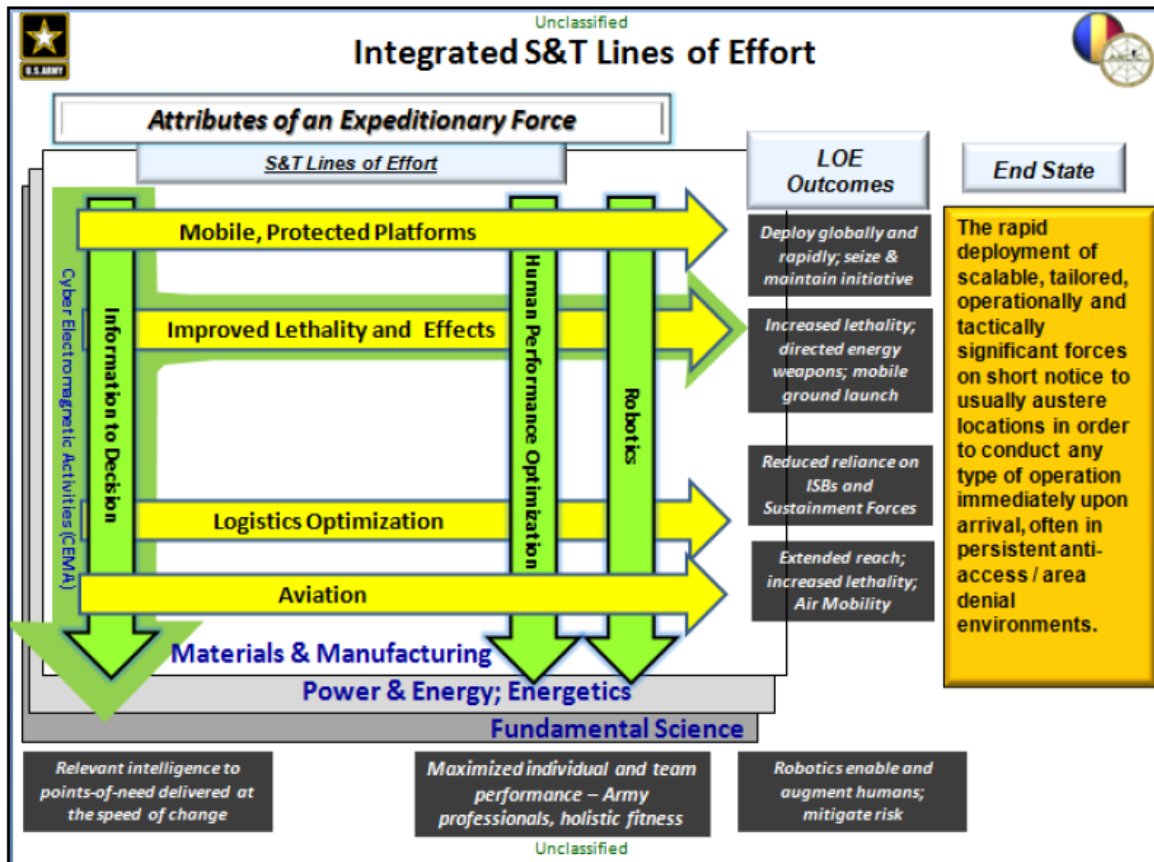


Figure 1: S&T Lines of Effort
(ARCIC: S&T LOE, 2014)

The S&T Lines of effort shown in Fig 1 are broken into two categories:

Baseline LOEs

1. Mobile Protected Platforms
2. Improved Lethality and Effects
3. Logistics Optimization
4. Aviation

Cross-cutting LOEs

5. Cyber Electromagnetic Activities (CEMA)
6. Information to Decision
7. Human Performance Optimization
8. Robotics (ARCIC: S&T LOE, 2014)

Meeting the imperatives identified by ARCIC will require the acquisition and sustainment communities to work together closely. Some efforts may be unpopular as they may result in a shift of resources/authorizations to react faster to contingency operations. According to the ARCIC white paper, use of technology to optimize support of the Warfighter is critical for these communities to do their part in reducing the functional force to logistics tail ratio which, according to the same paper, currently consists of 33% functional force and 66% logistics support (ARCIC: S&T LOE, 2014).

Chapter 2 – Literature Review

The purpose of the literature review is to identify, assess, and understand current statutes, regulations, policies, and their relevance, and relation, to the research topic. The literature review identifies any contradictions, or gaps, within the existing documentation. There are numerous US Statutes, Department of Defense (DoD) and Department of the Army (DA) regulations, as well as policies and procedures which direct and govern the sustainment of Army equipment, and the structure of the force using that equipment. This literature review provides an overview of key documents foundational to Army sustainment. It contains guidance from the United States President and Congress, suggested actions by strategic planners at the highest levels of the Army Forces Command, Training and Doctrine Command, Army Research and Development Command, and it reflects the past efforts of Department of Defense and Army Senior Leaders.

DoD Directive 5000.01, The Defense Acquisition System (DAS)

DoD Directive 5000.01 provides the acquisition program policy and management principles. Program Executive Officers (PEO) and Program Managers (PM) are required to follow as they develop a product within the Defense Acquisition System. This document provides Defense-level guidance and direction in the areas of flexibility, responsiveness, innovation, discipline, and management streamlining and decentralization (DoD D 5000.01, 2013).

DoD Instruction 5000.02, Operation of the Defense Acquisition System (DAS)

The DAS is directed by DoD Instruction 5000.02, “Operation of the Defense Acquisition System” dated January 7, 2015. The instruction provides the policies and principles that govern the DAS and forms the foundation for all DoD acquisition programs that include weapon systems, services, and Automated Information Systems (AIS). It establishes a Management Framework for translating user needs and technology opportunities, confirmed by the Army requirements processes, into stable, affordable and well-managed acquisition programs. The instruction also identifies the specific statutory and regulatory reports and other information requirements for each Milestone and Decision Point. The instruction is published by the Under Secretary of Defense (USD) for Acquisition, Technology and Logistics (AT&L) (DoD I 5000.02, 2015).

Army Structure Memorandum, 15 – 19, September 2013

The Army Structure Memorandum (ARSTRUC), produced by Army G-37 (Force Management), provides an authoritative record of Army Senior Leadership final decisions made during the Total Army Analysis (TAA) process, as well as changes made as part of the out-of-cycle process since the last ARSTRUC was published. The ARSTRUC memorandum directs the

commands to make appropriate adjustments to their force structure at the Unit Identification Code (UIC) level of detail during the next command plan. Commands record changes during the Command Plan process in the Structure and Manpower Allocation System (SAMAS), the official database of record for the Army. SAMAS, along with the Basis of Issue Plan (BOIP) and Table of Organization and Equipment (TOE) files, provides the basis for Army authorization documentations (Modified TOE (MTOE) and Table of Distribution and Allowances (TDA)). The ARSTRUC, 15 – 19, along with an addendum published in October of 2013, outlined the actions necessary for the Army to conduct the Brigade Combat Team (BCT) Restructure, the thrust of which reduced the number of BCTs aligned with a parent Division from four to three. This ARSTRUC Memorandum effectively reduced Army Staff Headquarters, but did not have a significant impact on combat equipment density. Combat equipment density is the quantity of a particular weapon system on hand in a tactical unit, used to carry out its combat mission. The memo directed the movement of the equipment, and requisite personnel, from a deactivating BCT to a remaining BCT. Pertinent to the research is that if equipment density is not reduced, the remaining sustainment capability must retain the capacity to support these numbers (U.S. Army, 2013).

United States Army Regulation (AR), AR-70-1, Army Acquisition Policy

Army Regulation 70-1 implements Department of Defense Directive (DODD) 5000.01, the DAS, and DODI 5000.02, Operation of the DAS. This regulation governs research, development, acquisition, and life cycle management of Army materiel solutions. Following statutory requirements, this regulation is first in the order of precedence for managing Army acquisition programs. The regulation assigns the responsibility for total life cycle systems management to the PMs and states there is no transition of life cycle management responsibilities

away from the PM (Para. 1-5.e), leaving the PM responsible to identify opportunities to optimize total system performance and reduce total ownership costs (AR 70-1, 2011).

AR 700-127, 7 Oct 2014, Integrated Product Support

AR 700-127 prescribes the Department of the Army policy for implementing performance-based life cycle product support, including Performance Based Logistics (PBL). This is accomplished through the Army's integrated product support program which includes planning, developing, acquiring and sustaining the support strategies for Army materiel and software. AR 700-127 implements key provisions of DODD 5000.01, DODI 4151.22, DODI 5000.02, and DODI 5000.67. The revision (released 7 Oct 2015) contains a multitude of changes which reflect the ongoing high level efforts to ensure optimal use of critical resources, the result of collaboration and planning at all levels, and in all communities (acquisition, sustainment, research and development), of the Army. Key changes which pertain to the subject of the research include:

Replacement of the former 10 Integrated Logistics Support elements with 12 Integrated Product Support elements and replaces Integrated Logistics Support with Integrated Product Support (throughout).

- Adds policy for contractor logistics support for nonstandard equipment (para 4-15).
- Revises policy for conducting analysis of product support alternatives in support of performance-based product support strategies (para 6-3).
- Revises policy for conducting a Core Logistics Analysis (para 6-8).
- Revises policy for conducting a Core Depot Assessment (para 6-9).
- Revises policy for conducting a core Depot assessment and a depot source of repair analysis.
- Adds policy that requires maximum use of common tools, batteries and chargers, to minimize special tools, batteries, and battery chargers, at field level.

- Adds policy that requires annexes to the Life Cycle Sustainment Plan, independent logistics assessments, and sustainment reviews.
- Adds policy that requires a Replaced System Sustainment Plan and requires a System Demilitarization and Disposal Plan.
- Implements product support requirements outlined in Department of Defense Directive 5000.01 and DOD Instruction 5000.02 throughout the regulation (AR700-127, 2014).

AR 700-142, 2 Jun 2015, Type Classification, Materiel Release, Fielding, and Transfer

AR 700-142, assigns responsibilities and prescribes policies for the Army's Type Classification (TC), Materiel Release (MR), materiel fielding, and materiel transfer processes. The TC process ensures that materiel is acceptable for Army use prior to spending procurement funds at the Full-Rate Production (FRP) Decision Review. The MR process ensures that Army materiel is safe, suitable, and supportable. The materiel fielding and transfer processes ensure the orderly and effective deployment and transfer of Army equipment, including all necessary logistics support requirements.

The regulation assigns responsibilities to ASA (AL&T) which include ensuring supportability requirements are validated and included in the materiel acquisition process to support Total Package Fielding and Full Materiel Release of programs and systems. AMC's responsibilities under this regulation are found on page 6 which include the release of materiel through the MR authority when materiel meets the requirements outlined in this policy. The appropriate Life Cycle Management Command (LCMC) serves as the MR Authority for ACAT I-III systems and equipment or materiel considered for Urgent Material Release (UMR) to include UMR systems managed by ASA (AL&T), PEO or PM, except for cases where this regulation grants MR authority to the PEO or Joint PEO (JPEO). The PM's responsibilities include requesting TC, developing a MR strategy, ensuring system safety, meeting suitability requirements, verifying the system is logistically supportable, ensuring training for personnel is

available and adequate, meet ammunition requirements, training devices are available and supportable, as well as developing a Materiel Transfer Plan. The requirement for the LCMC's approval prior to MR underlines the need for the PM and LCMCs to have a strong, transparent, working relationship (AR 700-142, 2015).

ASA (AL&T) Memorandum, 27 May 2014, Subject: Management and Analysis Review of Contractor Support of Materiel

The document, signed by the Honorable Ms. Shyu, is indicative of the criticality of identifying potential cost savings, systems which may be ready to transition from contractor to organic logistics support, system divestiture planning, identifying and updating the system logistics support and training strategy, and identify historical and current funding sources (Operation and Maintenance Army, Other Procurement Army, or Overseas Contingency Operations for materiel with enduring requirements and possible Acquisition Programs) (Shyu, 2014).

ASA (AL&T)/AMC Memorandum, 3 Dec 2014, Subject: Joint Acquisition and Sustainment Reviews (JASRs)

The JASR documents the common findings of interest between the Honorable Ms. Shyu, ASA (AL&T), and General Via, AMC Commanding General, per the co-signed Joint Acquisition and Sustainment Review. It stresses the importance of the need to address future sustainment challenges with the most effective and efficient use of scarce resources. Below is a listing of common findings and initiatives:

- JASR Common Findings:
 - The recruitment, development, and retention of our acquisition workforce remains our paramount priority.
 - The frank discussion of local issues facilitates enterprise solutions.

- The organic industrial base must adapt to our fiscal environment.
- As an effort to maintain their strategic dialog and address the above findings, the Honorable Ms. Shyu and General Via directed the establishment of joint ASA (AL&T) and AMC task forces to implement the below initiatives:
 - Improve clarity of materiel enterprise roles, missions, functions, and authorities. (Co-Led by AMC and ASA (AL&T) OASA (Acquisition Policy and Logistics))
 - Develop flexible workforce management processes and tools. (Co-led by DASA Plans, Programs and Resources (ASA (AL&T)) and AMC G-1).
 - Standardize matrix support. (Co-led by DASA Plans, Programs and Resources (ASA (AL&T)) and AMC G-8).
 - Optimize weapons system contracting. (Co-led by CG, ACC and DASA (Procurement)).
 - Assess the organic industrial base. (Co-led by DASA (Acquisition Policy and Logistics) and AMC G-4). (Shyu & Via, 2014)

These two Senior Army decision makers have highlighted the need for the acquisition and sustainment communities to work together and embrace information sharing and the wise use of all resources among their other interactions in support of the Warfighter (Shyu & Via, 2014).

Product Support Manager Guidebook, April 2011

The National Defense Authorization Act for Fiscal Year 2010 (Public Law 111 – 84) requires that each major weapon system be supported by a Product Support Manager (PSM) and lays out the responsibilities of the PSM. In 2011, the Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness, Mr. Alan P. Estevez, signed the PSM Guidebook which serves as a reference which addresses key requirements for the PSM for managing product support. The guidebook's intent is to help the PSM serve their primary customer, the warfighter

and the taxpayer. It also stresses the need to synchronize the processes of acquisition and life cycle product support. The guidebook underscores the need for any community involved with system acquisition and support to synchronize efforts and optimize use of resources in order to maintain readiness and control cost over the life of the system (Estevez, 2011).

Combined Arms Support Command, 30 Aug 2013, Subject: Army 2020 and Beyond Sustainment White Paper

This document forecasts future sustainment challenges from strategic to tactical levels. It documents the transformation of the current force from an Army at War to an Army of Preparation capable of Globally Responsive Sustainment (U.S. Army, 2013). It identifies a need for the Science and Technology communities to develop, among other attributes, systems that are lighter, more lethal, self-sustaining, more fuel efficient, and a reduction of life cycle costs. The challenges to the future Army are many with Science and Technology sharing in that challenge and one of the final challengers to the Science and Technology community is “Rapid Acquisition and Modification of Equipment” (U.S. Army, 2013, 2013). There is plenty of work for any organization involved with acquiring, fielding, improving, and sustaining, the Army equipment of the future. Organizations responsible for sustainment of Army weapon systems cannot afford to not work together in successfully addressing those challenges and providing the best support possible to the warfighter (U.S. Army, 2013).

ASA (AL&T) Memorandum, Operations and Support Review, 29 Apr 2015

Signed by the Honorable Ms. Shyu, the document identifies interim requirements for the Operational Sustainment Review (OSR) established by the latest release of AR 700-127. The OSR is a formal post-production decision review focusing on preparing the system to transition from procurement resourcing to sustainment resourcing, actual execution of the sustainment strategy, and future Operations and Support (O&S) planning and costs (Shyu, Operations and

Support Review., 2015). A successful OSR documents the official transition of a system from development and procurement to operation and sustainment. (Shyu, 2015).

Capability Needs Analysis (CNA)

The Army must convert high-level strategic concepts contained in documents from the President and DoD into capabilities that meet Soldiers' needs. The Army Concept Framework in the CNA provides a visual representation of how Army capabilities requirements are developed prior to any materiel capabilities being entered into the DAS. To communicate these materiel requirements to the Army, the US Army Training and Doctrine Command (TRADOC) analyzes the strategic guidance received in various documents. Some of the documents analyzed were the National Military Strategy (NMS), The Army Plan (TAP), the Army Management Structure (AMS), and the Combatant Commanders' (COCOM) Integrated Priority Lists (IPL). The CNA advises Army budget makers on how to prioritize limited resources. It also enables knowledge sharing and linkages between the requirements, acquisition, engineering, and warfighting communities. The current form of the CNA adapts scope and methods to meet the demands of an Army in transition, now providing analytical and integration coverage across brigade-level formations while still looking across Warfighting Functions (WfFs) and across Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy (DOTMLPF-P) (DiGiosaffatte, 2013).

U.S. Army Forces Command (FORSCOM) G-4 Logistics White Paper 2015

The FORSCOM Logistics White Paper 2015 paints a picture of the need to return to basic maintenance management and maintenance training at all Warfighter skill levels and tasks. This is another challenge that the acquisition and sustainment communities should address as they work to provide the support the Warfighter will need in order to reestablish the maintenance

management systems and organic maintenance capabilities now critical due to funds no longer being available to pay contractors to manage planning and perform the required maintenance on home station equipment as they have for much of the past 13 years of war. Highlights of maintenance management, maintenance performance, supply chain responsiveness, and repair parts availability from the document include:

- Low fleet readiness rates are a result of five fundamental maintenance issues:
- Immature ASLs due to low OPTEMPO levels over the last 6-8 years.
- Poor field/sustainment maintenance management.
- Long lead-time repair parts associated with the industrial base ramp-up to meet growing requirements.
- Diminished skill sets and the lack of maintenance training for operators, mechanics, and maintenance leaders and managers.
- Command level prioritization and finding calendar white space to facilitate the right balance between missions and training Operational Tempo (OPTEMPO) (U.S. Army, 2015).

As stated in this document, “to help mitigate, FORSCOM will work with each Corps to re-establish dormant Maintenance Management and Fleet Readiness systems at the tactical and operational levels and to train senior Logistics leaders on how to manage the operational readiness of our formations” (U.S. Army, 2015, p. 7).

As the report identifies, FORSCOM aviation organizations have not been spared the maintenance issues of the past 13 years as illustrated by their own low readiness rates. The AH-64 Apache and CH-47 Chinook helicopters have experienced the same maintenance management issues as those of the ground fleets. The FORSCOM strategy is to improve Aviation Fleet

readiness rates with a “command-driven focus on maintenance training and discipline, improved aviation maintenance contract management in coordination with AMCOM, and AMC/DLA efforts to optimize the aviation Authorized Stockage List (ASL) and improve the agility and responsiveness of the industrial base” (U.S. Army, 2015).

FORSCOM’s ability to meet mission requirements using Theater Provided Equipment, maintained by contracted maintenance support, has resulted in the deterioration of unit organizational maintenance management systems and institutional performance of maintenance tasks. During OIF and OEF, maintenance management and maintenance performance was accomplished by contractors and FORSCOM must now take the necessary steps to re-educate leaders at all echelons on how to manage maintenance organically. Units will have to relearn maintenance and maintenance management activities such as Motor Stables, routine Battalion/Company Maintenance Meetings, Brigade level or higher Equipment Status Reviews and finally Division/Corps level Materiel Readiness Reviews (U.S. Army, 2015).

Long-range Investment Requirements Analysis (LIRA)

The Army uses the LIRA to maintain strategic equipping, sustainment, training, and installation goals at an acceptable level of modernization and risk. “LIRA provides a strategic view of Army material investments of four Program Equipment Groups (PEG) over a 30 year period and informs the Army's overall investment strategy to meet the holistic approach of long term strategic vision and goals (U.S. Army, 2015).” The LIRA is a fiscal planning process that informs both the Weapons System Reviews (WSR) and Program Objective Memorandum (POM). ASA (AL&T), AMC, and DA G8 Force Developers must participate in the Portfolio development during the planning phase to provide substantive input and address materiel development/sustainment issues. AMC subordinate commands should be aligned with the

numerous LIRA Portfolios based on their core functions. Collaboration at the highest levels in these strategic organizations is important but they must also ensure that collaboration and teamwork is extended into their subordinate organizations where most of the sustainment effort exists in support of the Warfighter (U.S. Army, 2015).

Defense AT&L Magazine, Jan-Feb 2014, Thirty Year Plans: What They Are and Why We Need Them

The article written by Mr. Vince Matrisciano identifies parallel efforts by Ms. Shyu, former Army Acquisition Executive, and the Deputy Chief of Staff of the Army G8, to identify long range (30 years or more) strategic plans to support decision making by the Army's Senior Leaders. In support of the ASA (AL&T) and DA G8 initiatives, the Research, Development and Engineering Command (RDECOM) and its subordinate centers and laboratories, developed 30-year roadmaps linking their technology initiatives to capability gaps and known programs of record as directed by the Deputy Assistant Secretary of the Army for Research and Technology. These long range plans support the Army's decision makers by providing a look at the possible 2nd and 3rd order effects their decisions will have in the future. The task of mitigating capability gaps is the work of all DoD organizations and a synergistic effort is critical to the wise, and optimized, use of resources (Matrisciano, 2014).

AMC History: Army Materiel Command (AMC) and the Goldwater-Nichols DoD Reorganization Act of 1986

The Goldwater-Nichols DOD Reorganization Act of 1986 resulted in major changes to the structure of AMC. The Act established an Assistant Secretary of the Army for Research, Development, and Acquisition as well as a Military Deputy. In addition, the Assistant Secretary of the Army was named the Army Acquisition Executive (AAE). In 1988, follow on restructuring resulted in 47 Program Managers being reassigned from AMC to the AAE/PEO

structure. AMC was removed from the direct chain of command but was tasked with the responsibility to support the project managers through matrix management (U.S. Army, 2013).

Army Logistician, Mar - Apr 05, Life-Cycle Management: Reducing the Burden on the Soldier

This article discusses the Army's initiative to integrate the Army Materiel Command's major subordinate commands (MSCs) and the program executive officers (PEOs) and program managers (PMs) who report to the Army Acquisition Executive (AAE) in an effort to form life-cycle management commands (LCMCs).

In 1987, the materiel development and acquisition functions were removed from AMC into a new structure of PEOs and PMs reporting to a new position outside of AMC, the AAE. Until 2004, these missions remained divided, with ASA (AL&T) responsible for system development and acquisition and AMC, via subordinate commands, responsible for sustainment. The life-cycle management command vision was to unite those mission areas by creating single commands with responsibility for all three areas (technology, acquisition, and sustainment).

On 5 October 2004, the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA (AL&T), also the AAE, signed an implementation directive to establish the first LCMC, designated Aviation and Missile LCMC at Redstone Arsenal, Alabama. The article is written from the viewpoint of the then Aviation and Missile LCMC Commanding General, James. H. Pillsbury and provides further details of the intent of this effort (Pillsbury, 2005).

From DoD instructions, to memorandums co-signed by ASA (AL&T) and the CG of the AMC, directions and guidance have been provided on the by the book method(s) to sustain Army equipment. These documents collectively tell us who should do what, when and where they should do it, and why. These documents were used to identify requirements dictated by them and to provide the necessary authoritative background for any courses of action developed.

These documents do not instruct leaders in the acquisition, sustainment and research and development communities how to do these things in the manner which provides the best possible product to the Warfighter. These documents also don't identify a requirement to be good stewards of the U.S. taxpayer's money. It is left to the leaders of these communities to work together to cultivate a synergistic environment capable of working together, sharing information and resources, to deliver these products to the Warfighter. Leaders at all levels must reach across the aisle and close ranks in order inspire a cultural change, realize the combined strength they possess, and deliver the deserved level of support to the U.S. Warfighter and remain good stewards of the U.S. Taxpayers' money and trust.

Chapter 3 – Research Methodology

The research methodology was designed to answer questions raised by the problem statement. A survey was used to provide quantitative data from a diverse population of professionals working in leadership positions in the Army acquisition, sustainment, and other AT&L career fields. The survey developed was a questionnaire utilizing Dichotomous (respondent has two optional answers) and Nominal-polytomous (respondent has more than two unordered options) questions. There were twenty six questions in the survey, with the first question being a consent form as detailed in Appendix B. Information was also collected from U.S. statutes, DoD, US Army, ASA (AL&T), AMC, and other regulations (MOAs, policies, etc.). Another source of information came from third party interviews of publicly elected individuals, political appointees, and others who are considered Subject Matter Experts (SMEs) in fields related to DoD sustainment.

The potential survey participants came from current, or former, members of the Acquisition Workforce, based on:

- position in the Defense Acquisition Workforce
- assignment to an acquisition, sustainment, contracting, research and development, business, test, or other communities related to the development and sustainment of Army Weapon systems including Information Technology, and other non-weapon system procurements

A representative sample of the current Acquisition Leadership, comprised of 131 individuals was selected as the sample population for the research. The survey questions were developed to identify participant demographics and possible areas requiring increased interaction and collaboration on the part of the acquisition and sustainment communities in order to provide the best possible support to their ultimate customer, the Warfighter.

An email was sent to the 131 individuals with an explanation of the survey and a survey hyperlink for each individual participant. Survey questions can be found in Appendix B. The quantitative data, along with qualitative data, collected during the literature review and seminars/briefings will be used to develop potential courses of action (COA) for consideration by Senior Army decision makers. The data analysis, along with qualitative data, collected during the literature review will also be used to develop potential courses of action (COA).

Desired Outcome

The desired outcome is that the analysis of the data collected will identify opportunities to optimize sustainment support provided to Army systems and soldiers. Additional benefits may be the applicability of the findings and corresponding COAs to the rest of the Army.

Limitations of the Study

The applicability of the research to other services, such as the Air Force or Navy has not been included in this study. In addition, the information in the research is only associated with

the Department of the Army sustainment process. Sample size and time constraints to conduct the research were additional limitations.

Chapter 4 – Findings

A survey was used to collect quantitative data from a diverse population of professionals working in leadership positions. The survey data is presented in this chapter and will be analyzed, along with the qualitative data collected, in Chapter 5.

The findings of this research effort are considered significant and will be discussed further in Chapter 5. As stated, 131 survey invitations were sent out with 42 responses. The fact that 89 survey recipients chose not to respond will be discussed in Chapter 5.

Question 1: I have read the Informed Consent form and I agree to participate in this research.

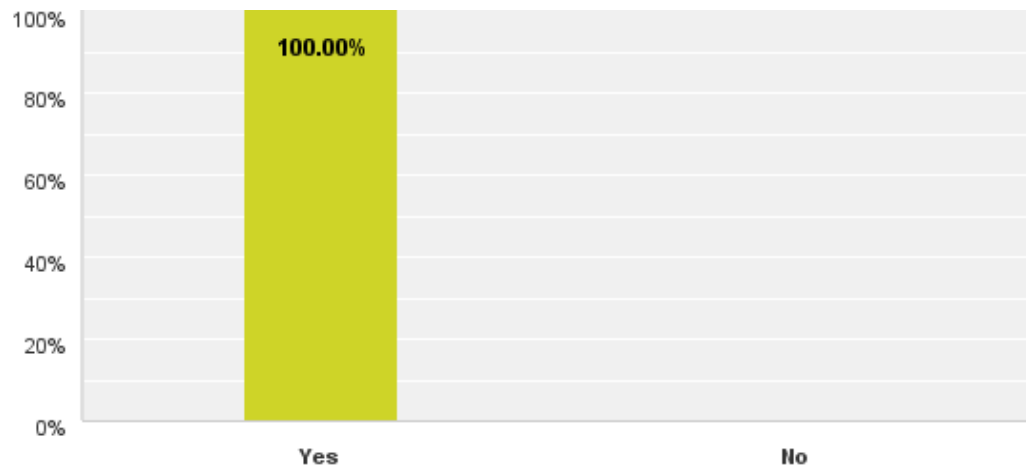


Figure 2. Survey Participation Consent Data: All 42 Participants Consented
(Gross, 2016)

All survey participants signed/agreed to the stipulations of the consent form.

Survey questions 2 – 15 establish the demographics of the sample population and pertinence to the research discussed as applicable.

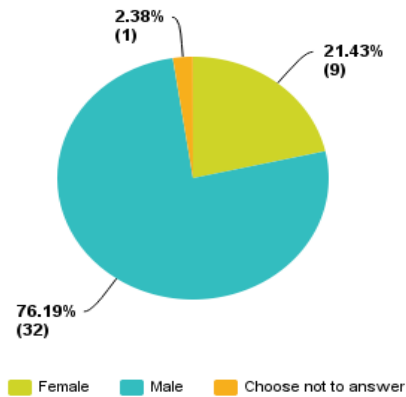
Question 2: Gender

Figure 3: Respondents Gender Results
(Gross, 2016)

Of the survey respondents, 76.2% were male, 21.4% were female, and 2.4% chose not to answer as reflected in Figure 2.

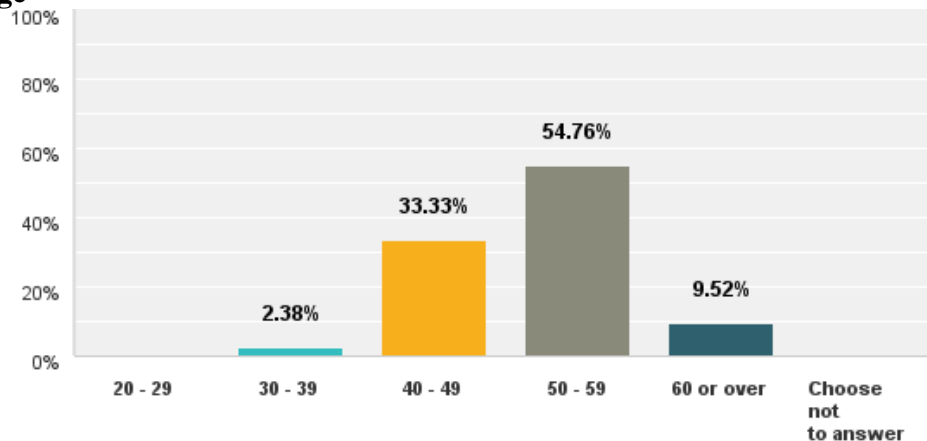
Question 3: Age

Figure 4: Respondent Age Groups
(Gross, 2016)

The survey question asked the respondents' current age. The results in Figure 4 reflect 54.8% in the 50 – 59 year age group and 9.5% in the 60 or over age group.

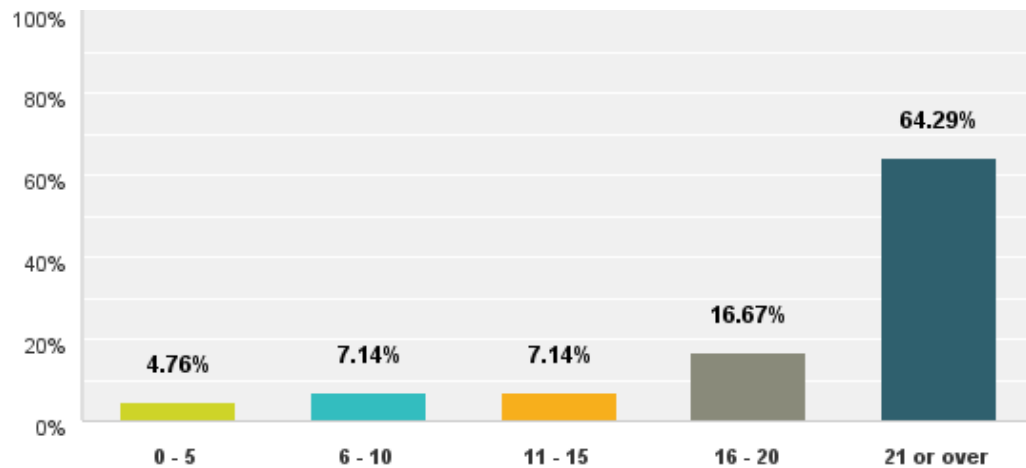
Question 4: Number of Years of Acquisition/Logistics Experience

Figure 5: Number of Years of Acquisition/Logistics Experience
(Gross, 2016)

The data collected reflects the bulk (nearly 71%) of the respondents with over 16 years of experience at their job.

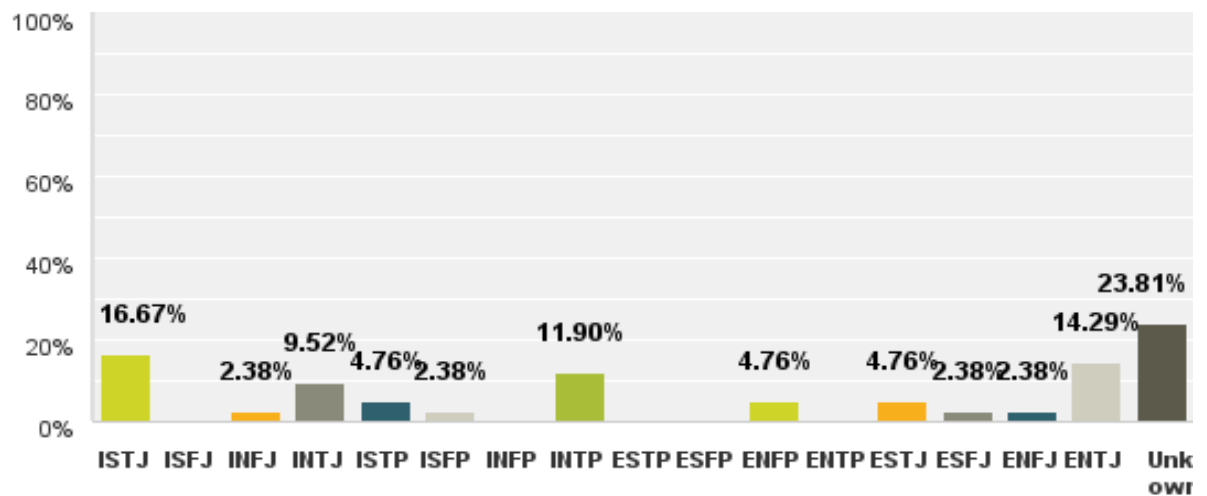
Question 5: What is your Meyers - Briggs type?

Figure 6: Myers-Brigg Type of Respondents
(Gross, 2016)

Myers-Brigg

The graph in Figure 6 depicts the Myers-Brigg type of the respondents.

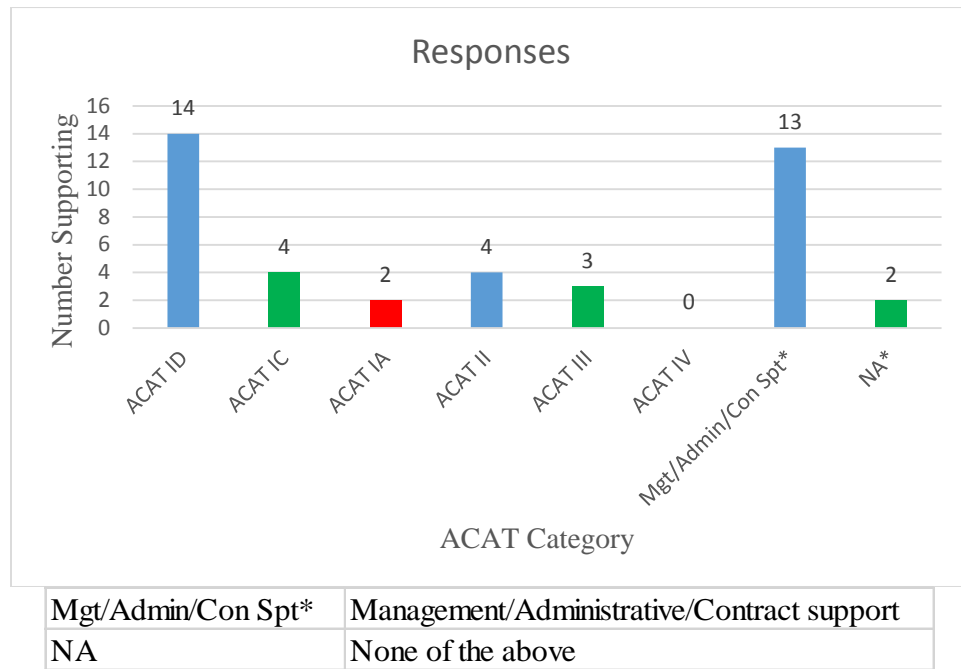
Question 6: Identify the ACAT Program level you currently manage or support.

Figure 7: ACAT Program Level Managed or Supported
(Gross, 2016)

The chart in Figure 7 reflects 64.2% (27) of respondents working within a PEO or PM and 35.8% (15) in external organizations engaged in support of the PEO/PM.

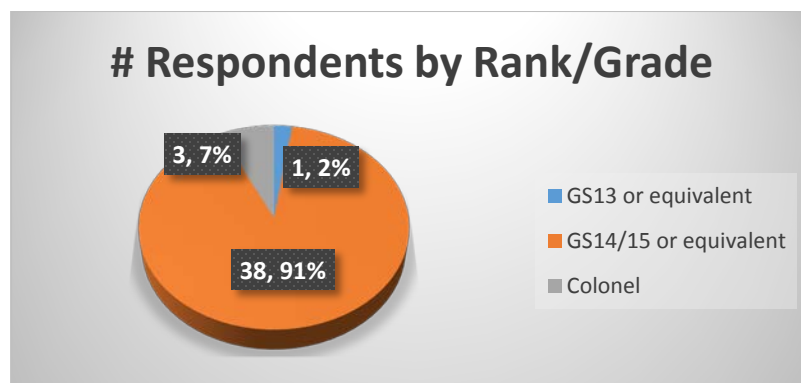
Question 7: Current Military Rank or Civilian Grade

Figure 8: Current Military Rank/Civilian Grade

The majority of respondents were in the Civilian Grade of NH04, GS14/GS15 equivalent.

Question 8: Current MOS or Job Series

The respondents occupy a diverse set of Job Series or Military MOS with the largest job series represented being 0346 (Logistics Management).

Question 9: Education Level (High School, Bachelors, Masters, Doctorate, etc.)

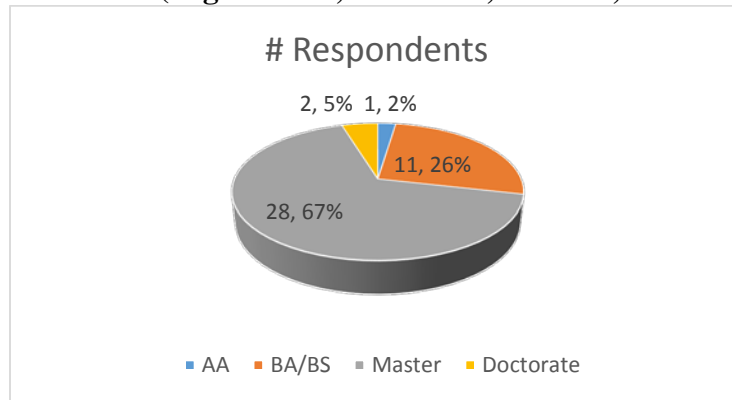


Figure 9: Education Level

Question 9 data reflected in Figure 9 reveals the education level of respondents.

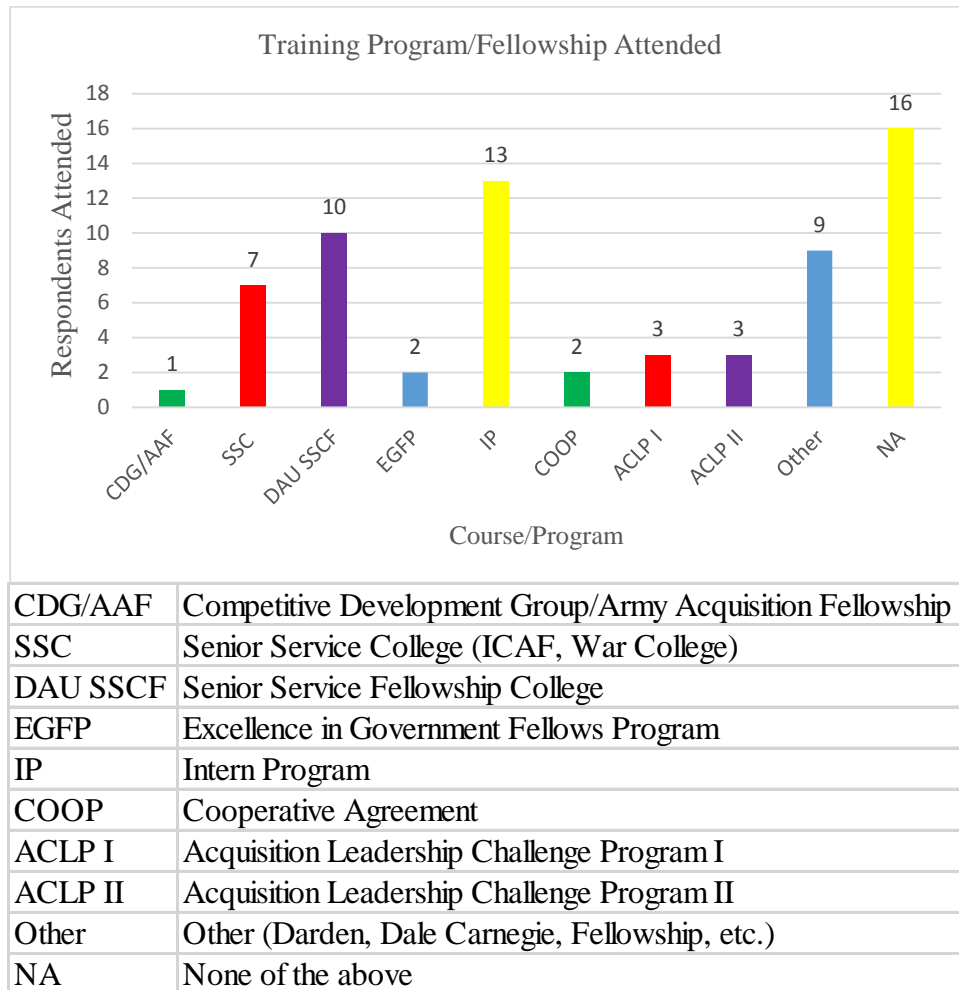
Question 10: Training/Fellowship Programs you have completed or are participating in.

Figure 10: Training/Fellowship Programs Completed or Participating In
(Gross, 2016)

Figure 10 provides an oversight of the training completed by the respondents.

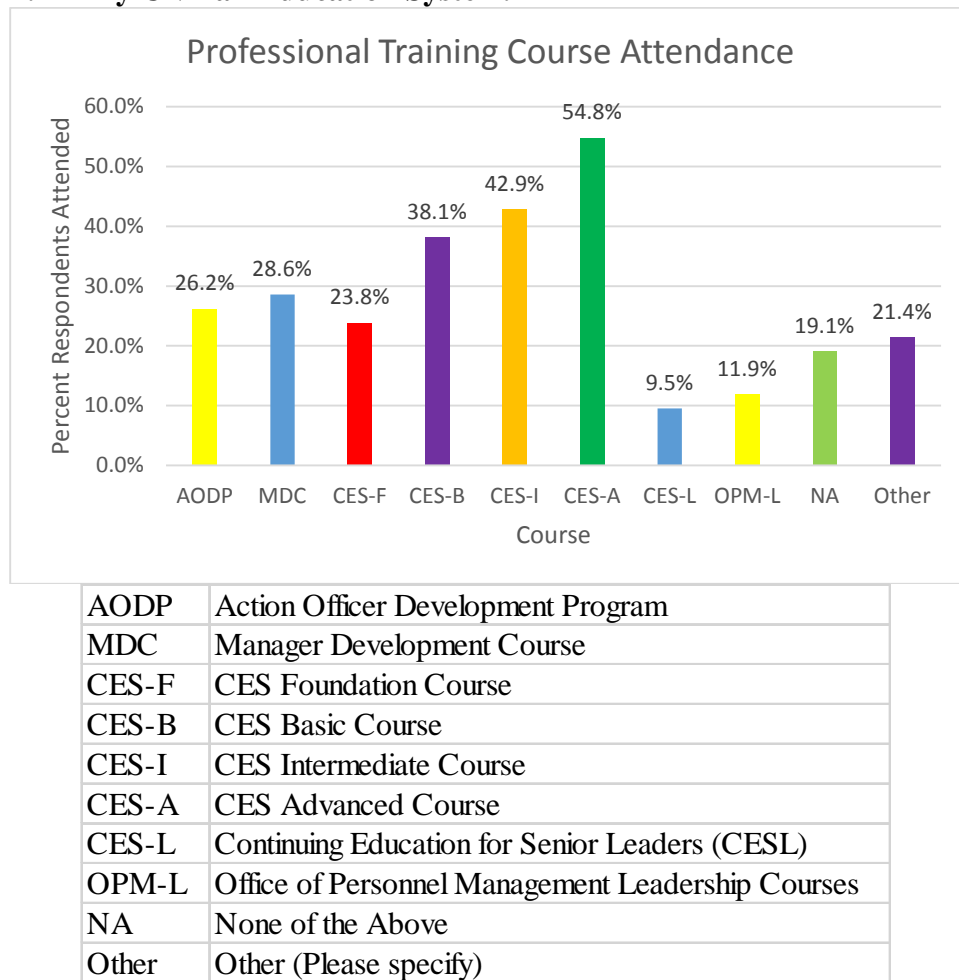
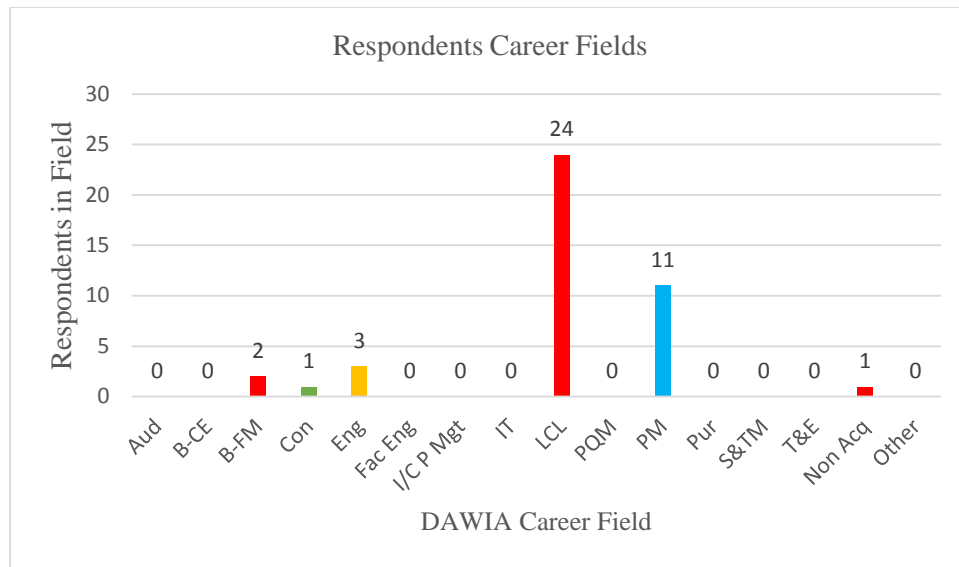
Question 11: Army Civilian Education System.

Figure 11: Army Civilian Education Courses Completed
(Gross, 2016)

The survey results indicate that 54.8% of the respondents have completed the Advanced Civilian Education System (CES) Course. All but three survey respondents are in the grade GS14/GS15 or equivalent (one NH03).

Question 12: What is your primary DAWIA Career Field?

Aud	Auditing	LCL	Life Cycle Logistics
B-CE	Business – CE	PQM	PQM
B-FM	Business – FM	PM	Program Management
Con	Contracting	Pur	Purchasing
Eng	Engineering	S&TM	S&TM
Fac Eng	Facilities Engineering	T&E	Test & Evaluation
I/C P Mgt	Industrial/Contract Property Management	Non Acq	Non Acquisition Position
IT	Information Technology	Other	Other (please specify)

Figure 12: Primary DAWIA Career Field

(Gross, 2016)

Figure 12 reflects the DAWIA career field of the respondents.

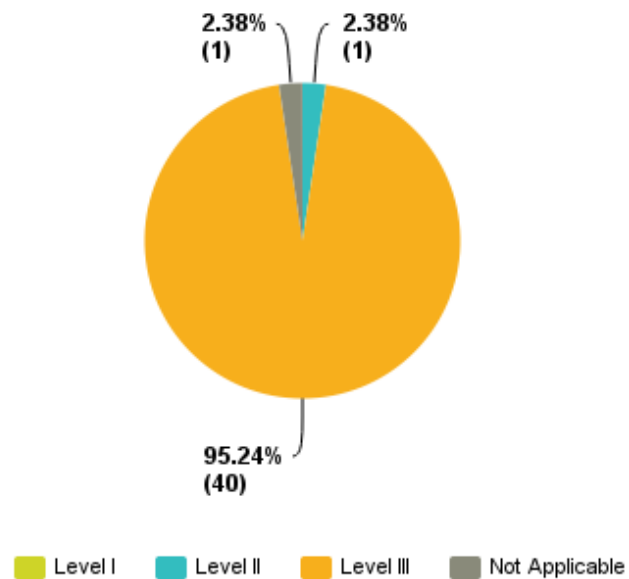
Question 13: What is your Certification Level in your primary DAWIA Career Field?

Figure 13: Respondent DAWIA Certification Level
(Gross, 2016)

Figure 13 reveals the DAWIA certification level of the respondents.

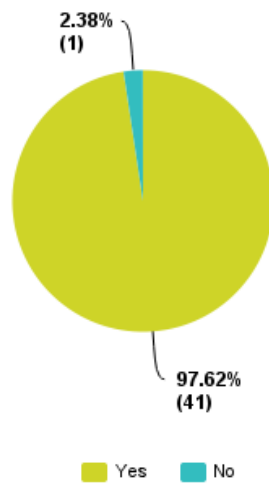
Question 14: Are you an Acquisition Corps member?

Figure 14: Acquisition Corps Membership
(Gross, 2016)

All but one of the 42 respondents is an Acquisition Corps member.

Question 15: What is your current parent organization? (Select the most appropriate based on your current (or previous assignment if currently in any Long Term Training Program)).

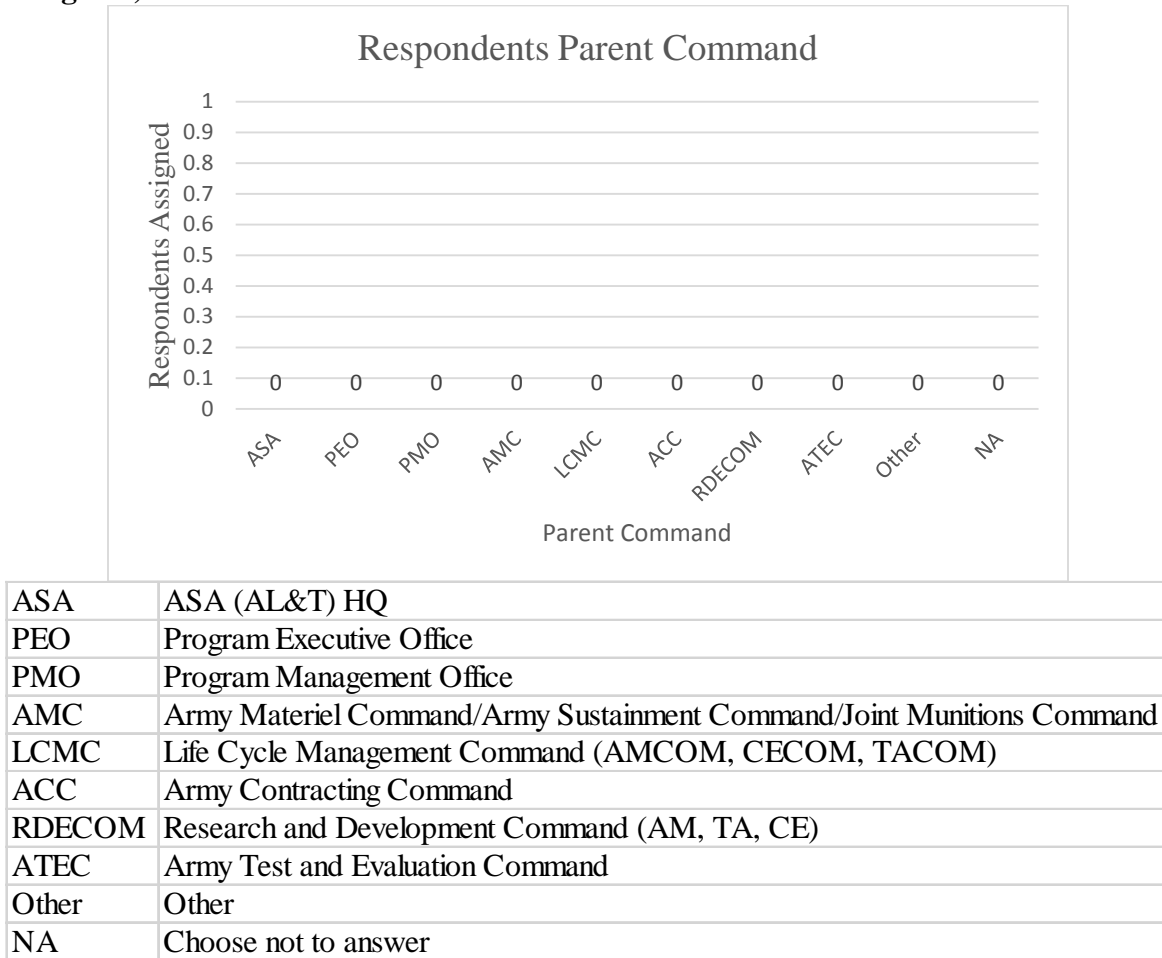
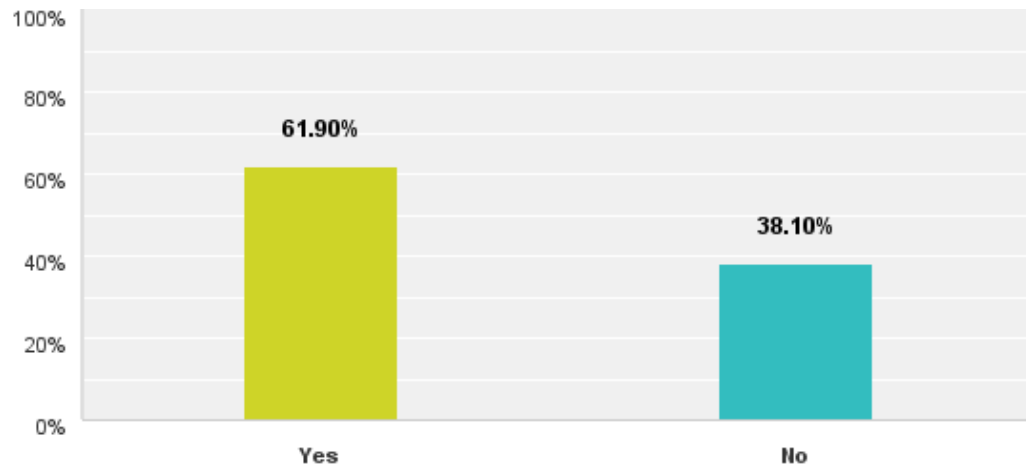


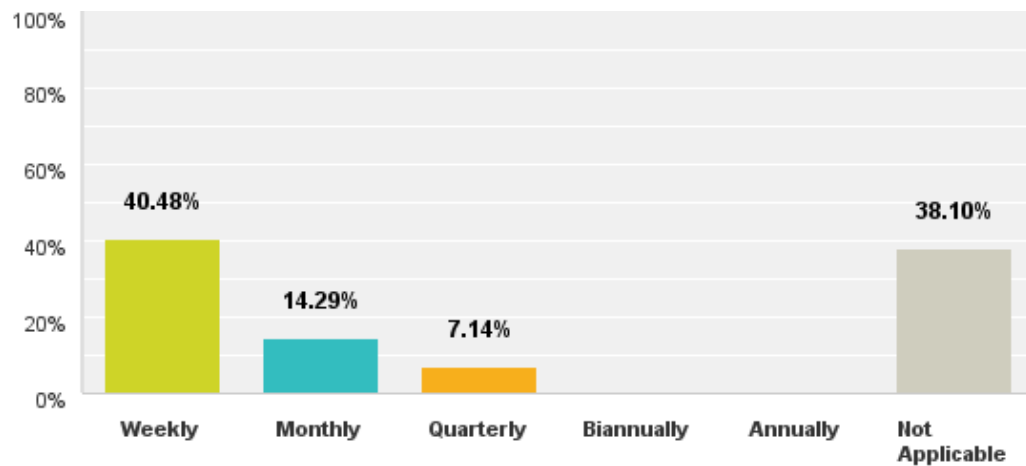
Figure 15: Respondents Current Parent Organization
(Gross, 2016)

Figure 15 reflects the parent organization of the respondents.

Question 16: Are you a leader/member of an Acquisition Integrated Product Team?**Figure 16: Acquisition Integrated Product Team Leader/Member**

(Gross, 2016)

Figure 16 reflects that 61.9% of respondents either lead or are members of an Acquisition IPT.

Question 17: How often does your IPT meet?**Figure 17: Acquisition IPT Meeting Frequency**

(Gross, 2016)

Figure 17 reflects the frequency with which the respondent meets with members of their respective IPT.

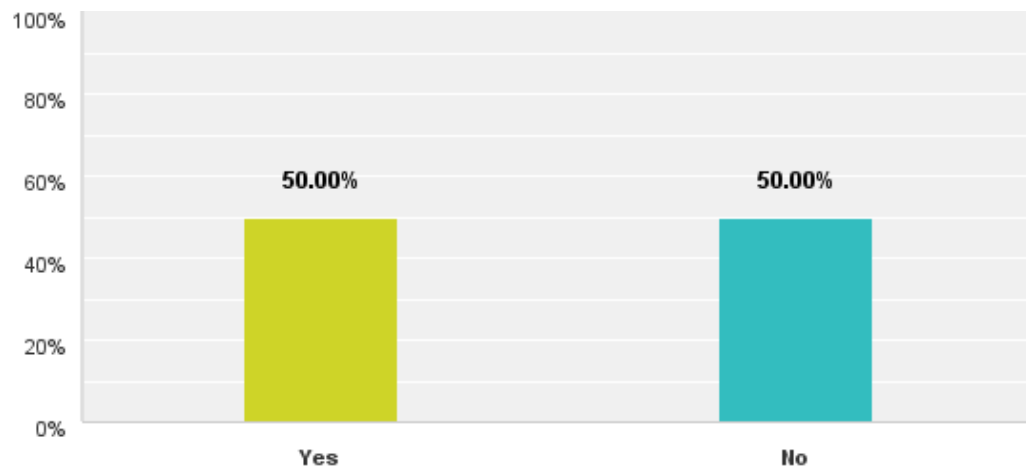
Question 18: Are you a leader/member of a Sustainment Integrated Product Team?

Figure 18: Sustainment IPT Leader/Member
(Gross, 2016)

Figure 18 reflects that 50% of respondents either lead or are members of a Sustainment IPT.

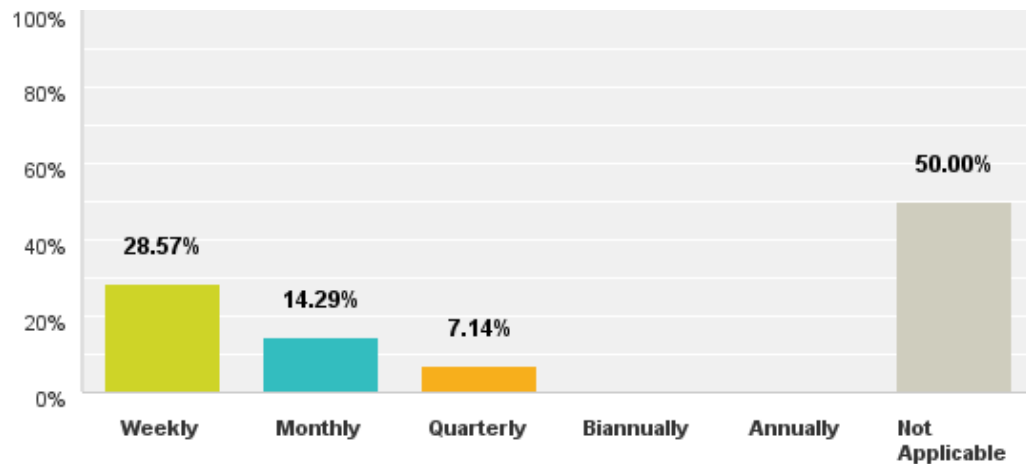
Question 19: How often does your IPT meet?

Figure 19: Sustainment IPT Meeting Frequency
(Gross, 2016)

Figure 19 reflects the frequency with which the respondent meets with members of their respective IPT.

Question 20: How often do you meet with members of the Acquisition community (Program Management, Contract Management, Contracting, Testing, Logistics, Engineering, etc.) who are not assigned to your current organization to discuss program support/requirement plans?

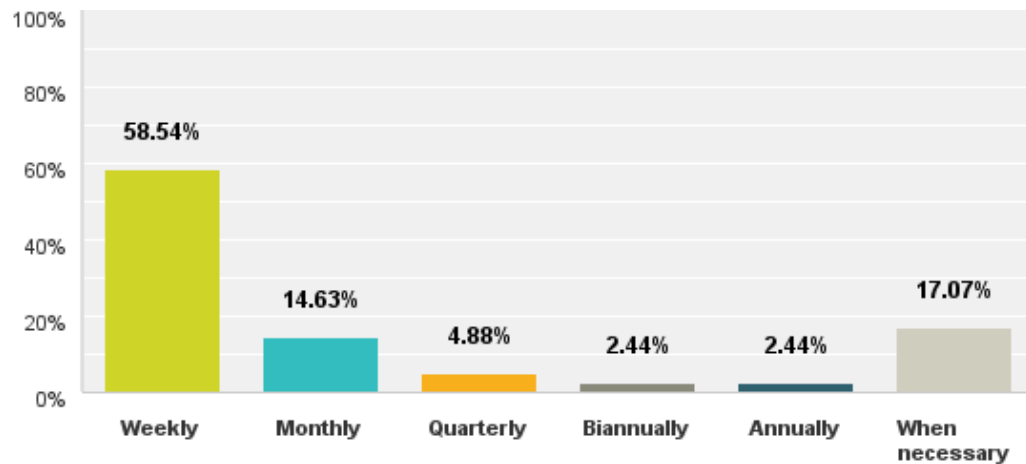


Figure 20: Inter-organizational Weapon System Support Synchronization Meeting Frequency
(Gross, 2016)

Figure 20 reflects the answers to Question 20.

Question 21: Do you feel your collaboration efforts with your counterparts from the LCMC or PEO/PM community allow you to synchronize requirements in order to make the most effective use of funding available and provide the best possible product to the Soldier?



Figure 21: Effective LCMC – PEO/PM Collaboration Effort Effectiveness
(Gross, 2016)

Figure 21 reflects the responses received to Question 21.

Question 22: Do you participate in the Resource Allocation Committee (RAC), the Junior RAC, or other meetings which identify requirements/programming strategies needing funding in the System Sustainment Technical Support (SSTS) Program Evaluation Group (PEG)?

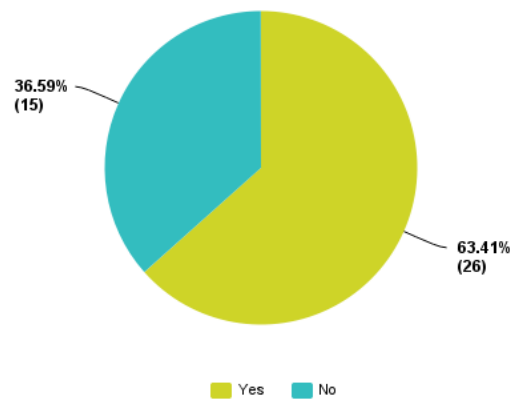


Figure 22: Participation in RAC, Jr. RAC, Requirements Planning Meeting
(Gross, 2016)

Figure 22 reflects the responses received to Question 22.

Question 23: Are you familiar with how (approved) sustainment (SSTS) funding flows from the Department of the Army to you?

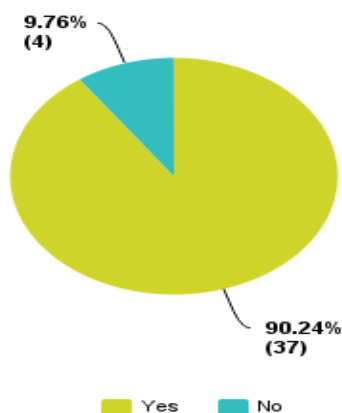


Figure 23: Knowledge of SSTS Funding Flow
(Gross, 2016)

Figure 23 reflects the responses received to Question 23.

Question 24: Do you know who sets the priorities for the distribution of sustainment (SSTS) funding?

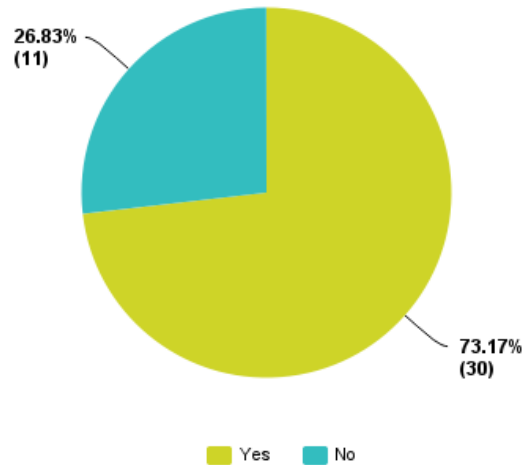


Figure 24: Prioritization of Sustainment Funding
(Gross, 2016)

Figure 24 reflects the responses received to Question 24.

Question 25: Do you receive sufficient information to keep you informed of current sustainment (SSTS) funding levels and priorities?

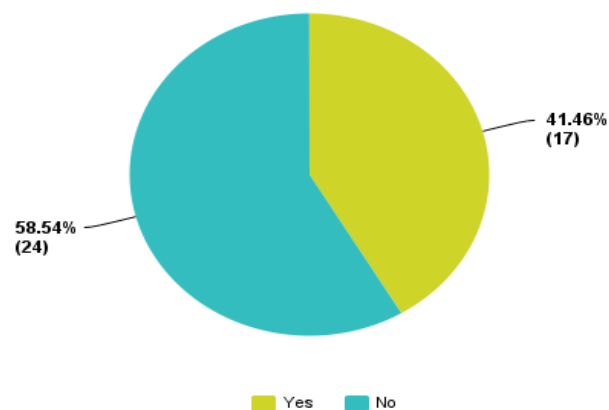


Figure 25: Sustainment Funding Level Information Sharing
(Gross, 2016)

Figure 25 reflects the responses received to Question 25.

Question 26: Do you feel attending a Resource Management 101 - Resource Management for non-Resource Managers/Planning, Programming, Budgeting, and Execution (PPBE) course or seminar would be beneficial to you?

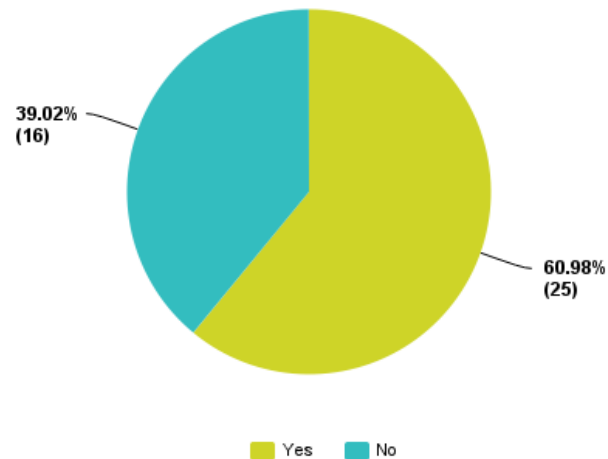


Figure 26: PPBE Training Interest
(Gross, 2016)

Figure 26 reflects the responses received to Question 26.

The survey collected demographic data pertinent to the sampled population. The responses to Questions 16 – 26 reveal data reflecting how the respondents conduct daily business activities.

Chapter 5 - Discussion and Recommendations

The President identifies the U.S. security policy in the National Security Strategy, which the DoD must then identify the means to support. The President and Congress further identify directions and requirements for DoD but (normally) never provide 100% funding to meet them in the annual budget. COCOMs, TRADOC, and FORSCOM identify capability gaps and provide operational recommendations to the Acquisition community for those gaps which call for one or more materiel solutions. Once those requirements are identified and verified using the Joint Capabilities Integration and Development System (JCIDS), funding is identified within the Planning, Programming, Budget, and Execution (PPBE) process, and the DoD and Acquisition community begin to identify a materiel solution as well as a Program Manager. The Program Manager:

shall be the single point of accountability for accomplishment of program objectives for total life cycle systems management, including sustainment... PMs shall consider supportability, life cycle costs, performance, and schedule comparable in making program decisions. Planning for Operation and Support and the estimation of total ownership costs shall begin as early as possible. Supportability, a key component of performance, shall be considered throughout the system life cycle (DoD D 5000.01, 2013, p. E1.29).

Once a materiel need is identified and the required planning to deliver the capability begins, the Product Support Manager (PSM) supports the PM through the development of the system Life Cycle Sustainment Plan (LCSP). To develop the LCSP, the PSM must interface with the sustainment community to identify the processes and resources needed to sustain the weapon system once it enters into the Operation and Sustainment phase of its life cycle. Based

on the type of weapon system being developed, one of AMCs' four Life Cycle Management Commands (LCMCs) will be intricately involved in the sustainment of the weapon system. The LCMCs are the result of the Life Cycle Management (LCM) Initiative agreement signed 2 Aug 04 by former Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA (AL&T)), the Honorable Mr. Claude Bolton, then AMC Commander General Kern. The initiative was approved by the then Chief of Staff of the Army, General Schoomaker. The Life Cycle Management initiative was an effort to "improve the total life cycle management" of Army weapon systems (Winbush, Rinaldi, & Giardina, 2005). The LCMCs include the Aviation and Missile Command (AMCOM), the Tank and Automotive Command (TACOM), the Communications and Electronic Command (CECOM) and the Joint Munitions and Lethality Command (JM&L). The first LCMC to be stood up was AMCOM LCMC, Commanded then by Major General (MG) James H. Pillsbury. According to the article in the March – April 2005 edition of Army Logistician (Professional Bulletin of United States Army Logistics), the plan to stand up the AMCOM LCMC was meant to "...unite those mission areas by creating single commands with responsibility for all three areas (technology, acquisition, and sustainment)" (Pillsbury, 2005, p. 2). The article further quoted MG Pillsbury:

The Aviation and Missile LCMC initially will be comprised of all elements of the current Aviation and Missile Command and the Program Executive Office, Aviation. The PEO Tactical Missiles and the PEO Air, Space and Missile Defense are working on plans to merge into a single PEO. Effective 1 June 2005, the merged PEO Missiles and Space organization will be included as part of the Aviation and Missile LCMC. I am the commander of the LCMC, and Paul Bogosian, PEO Aviation, assumes additional duties as the Deputy to the Commander for Aviation. When the newly merged PEO Missiles

and Space joins the LCMC in June, Brigadier General Mike Cannon will assume additional duties as the LCMC Deputy Commanding General for Missiles and Space (Pillsbury, 2005, p. 2).

The LCM Initiative was meant to improve delivery of critical capabilities to the Warfighter. We still have the AMC LCMCs, but the organization charts do not include the PEOs as deputies. As evidenced by the comments to the research survey, there is a gap between the acquisition and sustainment communities that must be closed.

Comments by the respondents to survey questions 21 - 25 provide insight into the level of information sharing, knowledge of resource prioritization and distribution requirement identification/programming strategies, and whether or not their collaboration efforts are fruitful:

58.9% said they did not receive sufficient information to keep them informed of current sustainment (SSTS) funding levels and priorities (Gross, 2016).

27% of the respondents said they did not know who sets the priorities for the distribution of sustainment (SSTS) funding (Gross, 2016).

27% of the respondents do not participate in the Resource Allocation Committee (RAC), the Junior RAC, or other meetings which identify requirements/programming strategies needing funding in the System Sustainment Technical Support (SSTS) Program Evaluation Group (PEG) (Gross, 2016).

31.7% of those responding did not feel their collaboration efforts with counterparts from the LCMC, or PEO/PM community allows them to synchronize requirements and make the most effective use of funding available and provide the best possible product to the soldier. According to one respondent, "Synchronizing the SS PEG and the EE PEG is a much larger challenge and requires a cultural change to ensure a more efficient and effective program. If you are making a

case that we have an educational problem, I would partially agree. Policy and the culture must be changed to ensure for a "true" lifecycle approach to our programs.” Another respondent stated, “It is more ad-hoc in nature than it should be. Somewhat personality dependent. More formal process to ensure engagements would be welcomed.” Another respondent’s comment further identifies the need to synchronize effort between the acquisition and sustainment communities: “No Synchronization of Requirements with LCMC. They are primarily receiving my products. They do get to review contract requirements, but generally they are not qualified to write Contract SOWs” (Gross, 2016).

One survey respondent’s comments provide an overview of the discussion to follow:

“There is great divide between the PEO/PM community and the AMC portion of our supporting LCMCs. This divide stems from both cultural and process differences that sometimes force us, as a team, to choose sustainment strategies that are suboptimal at the program level and highly inefficient at the enterprise level. The divide manifests itself most obviously in the way we resource sustainment of our systems. Although the PM is chartered to be the lifecycle manager for our systems, including the Operations and Sustainment phase after production and fielding, the truth is that the PM usually has very little influence or authority once a system enters this phase of the lifecycle. The primary obstacle for the PM and advantage for AMC is that the resources for sustainment are provided to AMC for management and execution and the PM is left on the sidelines as little more than a spectator to the resource management process (such as the OPS-29 process) and resultant sustainment decisions” (Gross, 2016).

That is not to say all LCMCs and PEOs have relationships that are not working, the harmony in some needs to be mirrored in all LCMC and PEO relationships. What should be done to do this and optimize sustainment in the Army?

A need to prioritize the use of resources will always exist. The NDAA 2010 addressed a need to improve Life-cycle Management and Product support, it established the requirement for the Product Support Manager (PSM). The PSM has an enormous amount of responsibilities (in support of the PM) and deserves the support of all communities involved in sustainment of Army weapon systems. The Army has replaced terminology used to develop integrated sustainment plans. The activities AR 700-127 once labeled “Integrated Logistics Support elements” are now “Integrated Product Support elements,” but the requirement for the Program Manager to consider these twelve elements when developing the weapon systems’ Life Cycle Support Plan remains the same (AR700-127, 2014). In short, legislation and regulations have provided laws and guidance to “use appropriate predictive analysis and modeling tools that can improve material availability and reliability, increase operational availability rates, and reduce operation and sustainment costs” (NDAA, 2010).

The data collected in the survey reveal an opportunity for the Army to optimize sustainment of its weapon systems. Army decision makers should seize the opportunity to improve on the exchange of meaningful dialogue and information sharing between the communities involved in Army sustainment. Acquisition and sustainment leaders should sit down face to face to discuss issues and collectively determine solutions. Their leading by example, and the importance of one team that they communicate to subordinates, will have a tremendous impact on optimizing sustainment of Army systems. The acquisition and sustainment communities consist of professionals, each of whom is a patriot dedicated to

supporting the Warfighter. The survey respondents' comments reflect their dedication, frustration, and identify a need for leaders at all levels to take action to develop a synergistic effort between the communities.

The individual comments from respondents (all government employees) identify an opportunity to educate the acquisition workforce of the history of Life Cycle Management and the planned enhancement of Army sustainment. As identified by the respondents, a major roadblock to optimizing sustainment of Army weapon systems is collaboration on the best use of available resources by the acquisition and sustainment communities. The respondents identified a need to integrate sustainment into the Life Cycle Support Plan as effectively and early as possible. As stated previously, the Life Cycle Management (LCM) initiative introduced an effort to "improve the total life cycle management" of Army weapon systems. The LCM initiative outlined a plan that "fosters stronger unity of command and unity of effort" (Winbush, Rinaldi, & Giardina, 2005, p. 3).

The research began based on the premise that there was a need to reduce Performance Based Logistics (PBL) contracts, or Contractor Logistics Support (CLS). The research has revealed sufficient guidance to the Program Executive Offices, as well as those organizations involved in sustainment support, of the need to reevaluate long term support plans for weapon systems transitioning from production to sustainment. Two examples are the ASA (AL&T) Memorandum, 27 May 2014, Subject: Management and Analysis Review of Contractor Support of Materiel, signed by the Honorable Ms. Shyu, and the ASA (AL&T)/AMC Memorandum, 3 Dec 2014, Subject: Joint Acquisition and Sustainment Reviews (JASRs), signed by Ms. Shyu and General Via.

Since 27 July 15, non-attributable briefings and symposia which included Senior Army leaders (current and retired) in the acquisition and sustainment community revealed a difference of opinion that exists between these communities when it comes to unity of command and effort, and collaboration on the use of resources, primarily those paid for with O&M, Army, dollars. Discussions among representatives of the acquisition and sustainment communities surfaced marked differences in their views as to priorities for the use of limited O&M funds (J. Smith, personal communication, 29 January 2015). During the development of the research topic, comments by various senior leaders of the acquisition and sustainment communities illustrated the need for improved communication of requirements and the prioritization of resources to meet them. The comments by senior acquisition and sustainment community leaders, current Fellows and SSCF alumni, have echoed this sentiment during the research. Competition between the acquisition and sustainment communities for scarce resources will probably never cease, and a certain level of competition may be good for all of us. Any competing efforts which prevent the two communities from providing optimal support to the Warfighter, and the wise use of the Taxpayer's money, is unacceptable.

Recommendations

The research shows acquisition and sustainment community senior leaders should take action to improve communication, transparency, and teamwork at all levels of these communities. The survey data reflects a need for leaders at all levels in these organizations to share information and needs more frequently and openly. Additionally, the research responses reflect a need for organizations in both communities to become less parochial as they prioritize the use of resources. Consideration must also be given to how resource usage can best support the Warfighter. In order to do so, the collaboration efforts which exist at the ASA (AL&T) and

CDR AMC levels must be drilled down throughout the subordinate levels, monitored, and frequent feedback and guidance provided. Good communication at all levels is critical to optimizing sustainment which can only result in the optimal use of available resources.

Senior Army leaders' decision not to improve current methods employed by the acquisition and sustainment communities to plan, request, prioritize, and use, the funds available to sustain current and future Army weapon systems is not advisable. As supported by the comments in the survey responses, the current relationship will not improve and the complaints and unhealthy competition for funds will continue. The communities cannot continue with the lack of information and resource sharing which exists between some organizations. The results are less than optimal use of these resources and a degradation in the support provided to their shared, ultimate customers, the Warfighter and the U.S. Taxpayer.

Recommendation 1 is the reorganization of the acquisition and sustainment communities, placing the Program Executive Offices under the LCMC Commanders, resulting in a rollback to the pre Goldwater-Nichols Act era, which would be similar to a part of the LCM Initiative which was not implemented previously and may very possibly face the same rejection now.

Consolidation of the two communities would certainly reduce the number of personnel within the higher headquarters of each organization at a time when there is a renewed call for a 25% reduction by 2020 in the 2017 President's Defense Budget sent to Congress on 9 Feb 16 (DoD, 2017). A benefit would be one chain of command from the Office of the Secretary of Defense to the PM. This would more than likely prove to be very unpopular within the affected organizations, and there may be prohibitive legal authorities/statutes.

Recommendation 2 is that senior Army leaders should seize the opportunity and focus on improving communication, transparency, and teamwork at and between all levels of the

acquisition and sustainment communities. Joint training efforts to educate senior and mid-level leaders in all communities involved in Army sustainment could be developed by the Defense Acquisition University and attendance made mandatory. Localized developmental assignments are another possibility to educate these same leaders on the challenges faced by those in other organizations striving to achieve a common goal: optimized support of the warfighter. Senior Army leaders should place a renewed emphasis on frequency and participation at all leadership levels on Integrated Product Teams, resource meetings, and other fora which identify and prioritize use of resources. The collaboration efforts which exist at the ASA (AL&T) and CDR AMC levels must be mirrored at subordinate levels, monitored, and frequent feedback and guidance provided. Good communication at all levels is critical to optimizing sustainment which can only result with the optimal use of available resources (Shyu & Via, 2014).

The research addressed the problem statement, optimizing postwar system sustainment support for Army weapon systems. The research analyzed published documentation from United States law, policy, regulations, and guidebooks related to the topic of sustainment of Army weapon systems. The research utilized a survey of the communities involved in the sustainment of Army weapon systems. The problem question is relevant, “How can the Army optimize system sustainment support?” Current and future Army decision makers must address this question and it is hoped they will consider the recommendations provided as a result of this research.

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Appendix A – Acronyms

AAE	Army Acquisition Executive
ACAT	Acquisition Category
AIS	Automated Information System
AMC	Army Materiel Command
AMMO	Ammunition
AMS	The Army Management Structure
AOR	Area of Responsibility
AR	Army Regulation
ARCIC	Army Capabilities Integration Center
ARSTRUC	Army Structure
ASA (AL&T)	Assistant Secretary of the Army for Acquisition, Logistics, and Technology
ASC	Army Sustainment Center
BBP	Better Buying Power
BCT	Brigade Combat Team
BOIP	Basis of Issue Plan
CASCOM	Combined Arms Support Command
CBM	Condition Based Maintenance
CES	Civilian Education System
CG	Commanding General
CLS	Contractor Logistics Support
CNA	Capabilities Needs
COA	Course of Action
COCOM	Combatant Commander
DA	Department of the Army
DAS	Defense Acquisition System
DASA	Deputy Assistant Secretary of the Army

DAWIA	Defense Acquisition Workforce Improvement Act
DLA	Defense Logistics Agency
DoD	Department of Defense
DOTMLPF-P	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policy
FRP	Full-Rate Production
GCS	Ground Combat Systems
HASC	House Armed Services Committee
IPT	Integrated Product Team
ISIS	Islamic State in Iraq and the Levant
JASR	Joint Acquisition and Sustainment Review
JPEO	Joint PEO
Jr. RAC	Junior Resource Allocation Committee
LAR	Logistics Assistance Representative
LCM	Life Cycle Management
LCMC	Life Cycle Management Command
LIRA	Long-range Investment Requirements Analysis
LOE	Line of Effort
MOA	Memorandum of Agreement
MOS	Military Occupational Specialty
MR	Materiel Release
MSG	Maintenance Steering Group
MTOE	Modified Table of Organization and Equipment
NDAA	National Defense Authority Act
NMS	National Military Strategy
O&M	Operations and Maintenance
O&S	Operation and Support
OASA (AL&T)	Office of the Assistant Secretary of the Army, Acquisition, Logistics, and Technology

OMA	Operations and Maintenance Army
OPS	
OPSEC	Operational Security
OPTEMPO	Operational Tempo
OR	Operational Readiness
OSD	Office of the Secretary of Defense
OSR	Operational and Sustainment Review
PBL	Performance Based Logistics
PEO	Program Executive Office
POM	Program Objective Memorandum
PM	Program Manager
PMO	Program Management Office
PPBE	Planning, Programming, Budgeting, and Execution (Process)
PSM	Product Support Manager
RAC	Resource Allocation Committee
RDECOM	Research, Development, and Engineering Command
S&T	Science and Technology
SAMAS	Structure and Manpower Allocation System
SASC	Senate Armed Services Committee
SMP	Scheduled Maintenance Programs
SSCF	Senior Service College Fellowship
SSTS	Sustainment System Technical Support
TAA	Total Army Analysis
TAP	The Army Plan
TC	Type Classification
TDA	Table of Distribution and Allowances
TOE	Table of Organization and Equipment

TRADOC	Training and Doctrine Command
UMR	Urgent Material Release
USD	Under Secretary of Defense
WfFs	Warfighting Functions

Appendix B – Survey Questions

Hello,

My name is Curtis Gross (curtis.d.gross.civ@mail.mil) and I am currently enrolled as a Fellow in the Defense Acquisition University's (DAU's) Senior Service College Fellowship Program. I am researching the synchronization of requirements, resources, and information sharing regarding the sustainment of Army weapon systems.

I hope you will consider participating in this survey. It is important for us to accurately identify requirements in order to most effectively use our limited resources in support of the Warfighter. I would greatly appreciate it if you would take a few minutes to complete this survey. Your input is important!

As an adult 18 years of age or older, you agree to participate in this survey. You understand that your participation is entirely voluntary. You can withdraw your consent at any time. By agreeing to participate in this study, you indicate that you understand the following:

1: If you choose to participate, you will be asked to complete an online questionnaire. The questionnaire will include items relating to demographics and DoD Guidance and Policy pertaining to sustainment of Army weapon systems. The questionnaire will take approximately 15 to 20 minutes to complete.

2: There will be no incentive for participation.

3: All items in the questionnaire are important for analysis, and data will be more meaningful if all questions are answered. You can discontinue participation at any time without penalty by exiting out of the survey.

4: There are no right or wrong answers; thus, you need not be stressed about finding a correct answer.

5: Data collected will be handled in a confidential manner. The data collected will remain anonymous.

The purpose of this research has been explained and your participation is entirely voluntary.

This page may be printed for your records as necessary.

Sustainment of Army Weapon Systems

1. I have read the Informed Consent form and I agree to participate in this research.

Yes

No

2. What is your gender?

Female

Male

Choose not to answer

3. Your current age range.

4. Number of years of acquisition/logistics experience.

5. What is your Meyers - Briggs type?

6. Identify the ACAT Program level you currently manage or support.

7. Current Military Rank or Civilian Grade

8. Current MOS or Job Series

9. Education Level (High school, Bachelors, Masters, Doctorate, etc.)

10. Training/Fellowship Programs you have completed or are participating in (check all that apply).

Competitive Development Group/Army Acquisition Fellowship (CDG/AAF)

Senior Service College (ICAF, War College)

SSCF (DAU)

Excellence in Government Fellows Program (EIGF)

Intern Program

COOP

Acquisition Leadership Challenge Program I

Acquisition Leadership Challenge Program II

Other (Darden, Dale Carnegie, Fellowship, etc.)

None of the above

11. Army Civilian Education System (check all that apply)

Action Officer Development Course

Manager Development Course

Foundation Course

Basic Course

Intermediate Course

Advanced Course

Continuing Education for Senior Leaders (CESL)

Office of Personnel Management Leadership Courses

None of the above

Other (please specify)

12. What is your primary DAWIA Career Field?

Auditing

Business – CE
Business – FM
Contracting
Engineering
Facilities Engineering
Industrial/Contract Property Management
Information Technology
Life Cycle Logistics
PQM
Program Management
Purchasing
S&TM
Test & Evaluation
Non Acquisition Position
Other (please specify)

13. What your Certification Level in your primary DAWIA Career Field?

Level I
Level II
Level III
Not Applicable

14. Are you an Acquisition Core member?

Yes
No

15. What is your current parent organization? (Select the most appropriate based on your current (or previous assignment if currently in any Long Term Training Program).

ASA (AL&T) HQ
Program Executive Office
Program Management Office
Army Materiel Command (AMC) to include Army Sustainment Command (ASC) and Joint Munitions Command
Life Cycle Management Command (LCMC, i.e. AMCOM, CECOM, TACOM)
Army Contracting Command
Research and Development Command (RDEC for AM, TA, CE)
Army Test and Evaluation Command (ATEC)
Other
Choose not to answer
Other (please specify)

16. Are you a leader/member of an Acquisition Integrated Product Team?

Yes
No

17. How often does your IPT meet?

Weekly

Monthly

Quarterly

Biannually

Annually

Not Applicable

18. Are you a leader/member of a Sustainment Integrated Product Team?

Yes

No

19. How often does your IPT meet?

Weekly

Monthly

Quarterly

Biannually

Annually

Not Applicable

20. How often do you meet with members of the Acquisition community (Program Management, Contract Management, Contracting, Testing, Logistics, Engineering, etc.) who are not assigned to your current organization to discuss program support/requirement plans?

Weekly

Monthly

Quarterly

Biannually

Annually

When necessary

Comments

21. Do you feel your collaboration efforts with your counterparts from the LCMC or PEO/PM community allow you to synchronize requirements in order to make the most effective use of funding available and provide the best possible product to the Soldier?

Yes

No

22. Do you participate in the Resource Allocation Committee (RAC), the Junior RAC, or other meetings which identify requirements/programming strategies needing funding in the System Sustainment Technical Support (SSTS) Program Evaluation Group (PEG)?

Yes

No

23. Are you familiar with how (approved) sustainment (SSTS) funding flows from the Department of the Army to you?

Yes

No

24. Do you know who sets the priorities for the distribution of sustainment (SSTS) funding?

Yes

No

25. Do you receive sufficient information to keep you informed of current sustainment (SSTS) funding levels and priorities?

Yes

No

26. Do you feel attending a Resource Management 101 - Resource Management for non-Resource Managers/Planning, Programming, Budgeting, and Execution (PPBE) course or seminar would be beneficial to you

Yes

No